No. 9200226

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Farmers Marketing Corporation

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF eighteen YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

BARLEY

'Max'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington, D.C. *this* 30th *day of* September *in the year of our Lord one thousand nine hundred and* ninety-three.

Attest:

Kenneth W. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

FORM APPROVED: OMB 0581-0055, Expires 1/31/91

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions on reverse)

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Farmers Marketing Corporation

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NO.
BA 7024

3. VARIETY NAME
MAX

4. ADDRESS *(street and no. or R.F.D. no., city, state, and ZIP)*
P.O. BOX 60578, Phoenix, AZ 85082-0578
3501 E. Broadway Rd., Phoenix, AZ 85040

5. PHONE *(Include area code)*
(602) 437-4058

FOR OFFICIAL USE ONLY

PVPO NUMBER
9200226

FILING
Date: July 7, 1992
Time: ☑ A.M. ☐ P.M.

FEES RECEIVED
Filing and Examination Fee: $ 2150.00
Date: July 7, 1992
Certificate Fee: $ 250.00
Date: Aug. 16, 1993

6. GENUS AND SPECIES NAME
Hordeum vulgare

7. FAMILY NAME *(Botanical)*
Gramineae

8. CROP KIND NAME *(Common Name)*
Spring Feed Barley

9. DATE OF DETERMINATION
1988

10. IF THE APPLICANT NAMED IS NOT A "PERSON," GIVE FORM OF ORGANIZATION *(Corporation, partnership, association, etc.)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Arizona

12. DATE OF INCORPORATION
5-1-85

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS

Rex K. Thompson, Plant Breeder
P.O. BOX 60578
Phoenix, AZ 85082-0578

Royce R. Richardson, President, CEO
P.O. BOX 60578
Phoenix, AZ 85082-0578

PHONE *(Include area code)*: (602) 437-4058

14. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow INSTRUCTIONS on reverse)*

a. [X] Exhibit A, Origin and Breeding History of the Variety.
b. [X] Exhibit B, Novelty Statement.
c. [X] Exhibit C, Objective Description of Variety.
d. [X] Exhibit D, Additional Description of Variety.
e. [X] Exhibit E, Statement of the Basis of Applicant's Ownership.
f. [X] Seed Sample (2,500 viable untreated seeds). Date Seed Sample mailed to Plant Variety Protection Office 6-26-92.
g. [X] Filing and Examination Fee ($2,150) made payable to "Treasurer of the United States."

15. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See section 83(a) of the Plant Variety Protection Act.)*
[X] YES *(If "YES," answer items 16 and 17 below)* [ ] NO *(If "NO," skip to item 18 below).*

16. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
[X] YES [ ] NO

17. IF "YES" TO ITEM 16, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
[X] FOUNDATION [X] REGISTERED [X] CERTIFIED

18. DID THE APPLICANT(S) PREVIOUSLY FILE FOR PROTECTION OF THE VARIETY IN THE U.S.?
[ ] YES *(If "YES," through* [ ] Plant Variety Protection Act [ ] Patent Act. Give date: _____ .)
[XX] NO

19. HAS THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
[XX] YES (If "YES," give names of countries and dates) United States Oct. 1, 1991 AAA 16 Sept 1993 per letter
[ ] NO

20. The applicant(s) declare(s) that a viable sample of basic seeds of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in section 41, and is entitled to protection under the provisions of section 42 of the Plant Variety Protection Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Royce R. Richardson Royce R. Richardson	President, CEO	6-26-92
SIGNATURE OF APPLICANT *(Owner(s))*	CAPACITY OR TITLE	DATE
Rex K. Thompson Rex K. Thompson	Plant Breeder	6-26-92

EXHIBIT "A" - ORIGIN AND BREEDING HISTORY

"Max" barley was derived from a short straw barley population developed and released by the USDA and the Experiment Stations of the University of Arizona and Montana State University as Composite Cross XXXII. CCXXXII originated from a male sterile facilitated recurrent selection program for short straw and lodging resistance. Formal seed distributions were made in 1976, 1978, 1981 and 1987 as the population was improved for wider ranges of adaptation, larger seed, increased straw strength, increased capacity for yield and disease resistance or tolerance. Max was increased by "best plant selection" from a single F_2 head selection to a F_7 head selection made in Montana in the Fall of 1987. The 1988 increase in Arizona was the basis of yield evaluation from 1989 - 1991. Remnant seed of the 1988 increase was increased in 1990 for the present designated breeder seed planted in Yuma, Arizona to produce certified foundation seed in 1991. Ninety-six head rows were grown at Maricopa, Arizona in 1991 to form the basis of the future Max foundation seed program.

Max barley in uniform and stable. Approximately .001% of plants in the foundation seed field were genetic male steriles. It is expected that up to .001% male sterile plants resulting from outcrossing on male sterile plants will be present in the subsequent generation. Headrowing for the continued foundation seed program may reduce or eliminate male sterility.

"Max" barley is most similar to Gustoe except for the following differences:

1) The aleurone layer of Max seed is colorless and that of Gustoe is blue.

2) Both varieties have glumes covered with hairs, hairs of Max are very short, Gustoe hairs are longer.

3) Gustoe glume and lemma awns are rough and those of Max are semi-smooth and smooth.

4) Hairiness of rachis edge Gustoe is well covered while only a very few hairs are on Max rachis edge.

In addition the following differences were noted in attached data tables:

	Max	Gustoe
Average yield for 19 location years (lbs. per acre)	5817	5417
Average kernel weight (grams per 1000 kernels)	40.6	38.8
Average plant height at maturity, 17 locations years (inches)	32.9	33.2
Average lodge rating for 18 location years (Rating 1-8)	2.7	4.0

FORM APPROVED: OMB NO. 40-R3822

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
COMMODITIES SCIENTIFIC SUPPORT DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Barley)

OBJECTIVE DESCRIPTION OF VARIETY
BARLEY (*HORDEUM VULGARE*)

INSTRUCTIONS: See Reverse.

NAME OF APPLICANT(S)
Farmers Marketing Corporation

ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)
P.O. BOX 60578, Phoenix, AZ 85082-0578
3501 E. Broadway Rd., Phoenix, AZ 85040

FOR OFFICIAL USE ONLY
PVPO NUMBER: 9200226
VARIETY NAME OR TEMPORARY DESIGNATION: MAX

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (i.e. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. GROWTH HABIT:

[1] 1 = SPRING 2 = FACULTATIVE WINTER 3 = WINTER [1] Early Growth: 1 = PROSTRATE 2 = SEMIPROSTRATE 3 = ERECT

2. MATURITY (50% Flowering):

[3] 1 = EARLY (California Mariout) 2 = MIDSEASON (Betzes) 3 = LATE (Frontier)

[ ] No. of days *Earlier* than ..... [ ]
[1] No. of days *Later* than ..... [8]
} 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Gustoe

3. PLANT HEIGHT (From soil level to top of head):

[1] 1 = SEMIDWARF 2 = SHORT (California Mariout) 3 = MEDIUM TALL (Betzes) 4 = TALL (Conquest)

[0][1] Cm. *Shorter* than ..... [8]
[ ][ ] Cm. *Taller* than ..... [ ]
} 1 = BETZES 2 = CALIFORNIA MARIOUT 3 = CONQUEST 4 = DICKSON 5 = PIROLINE 6 = PRIMUS 7 = UNITAN 8 = Gustoe

4. STEM:

[3] Exertion *(Flag to spike at maturity)*: 1 = 0 - 3 cm. 2 = 3 - 10 cm. 3 = 10 - 15 cm. [1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[0][5] NO. OF NODES (Originating from node above ground)

[3] Collar Shape: 1 = CLOSED 2 = V-SHAPED 3 = OPEN 4 = MODIFIED CLOSED OR OPEN [1] Shape of Neck: 1 = STRAIGHT 2 = SNAKY 3 = OTHER (Specify) _____

5. LEAF:

[1] Basal leaf sheath *(seedling)*: 1 = GLABROUS 2 = PUBESCENT [2] Position of flag leaf *(at boot stage)*: 1 = DROOPING 2 = UPRIGHT

[3] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY [2][1] MM. WIDTH (First leaf below flag leaf)

[3][0] CM. LENGTH (First leaf below flag leaf) [1] Anthocyanin in leaf sheath: 1 = ABSENT 2 = PRESENT

6. HEAD:

[2] Type: 1 = TWO-ROWED 2 = SIX-ROWED [2] Density: 1 = LAX 2 = ERECT (Not dense) 3 = ERECT (Dense)

[2] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____ [2] Waxiness: 1 = ABSENT (Glossy) 2 = SLIGHTLY WAXY 3 = WAXY

[1] Lateral Kernels Overlap: 1 = NONE 2 = AT TIP 3 = 1/4 - 1/2 OF HEAD [2] Rachis *(Hair on edge)*: 1 = LACKING 2 = FEW 3 = COVERED

7. GLUME:

[2] Length: 1 = 1/3 OF LEMMA 2 = 1/2 OF LEMMA 3 = MORE THAN 1/2 OF LEMMA [2] Hairs: 1 = NONE 2 = SHORT 3 = LONG

[4] Hair covering: 1 = NONE 2 = RESTRICTED TO MIDDLE 3 = CONFINED TO BAND 4 = COMPLETELY COVERED

[3] Awns: 1 = LESS THAN EQUAL TO LENGTH OF GLUMES 2 = EQUAL TO LENGTH OF GLUMES 3 = MORE THAN EQUAL TO LENGTH OF GLUMES

[2] Awn Surface: 1 = SMOOTH 2 = SEMISMOOTH 3 = ROUGH

FORM LPGS-470-5 (8-80) (Replaces edition dated 4-78 which may be used)

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8. LEMMA:

[5] Awn: 1 = AWNLESS 2 = AWNLETS ON CENTRAL ROWS, AWNLESS ON LATERAL ROWS 3 = SHORT ON CENTRAL ROWS, AWNLETS ON LATERAL ROWS 4 = SHORT (less than equal to length of spike) 5 = LONG (longer than spike) 6 = HOODED

[2] Awn Surface: 1 = AWNLESS 2 = SMOOTH 3 = SEMISMOOTH 4 = ROUGH

[2] Teeth: 1 = ABSENT 2 = FEW 3 = NUMEROUS

[2] Hair: 1 = ABSENT 2 = PRESENT

[2] Shape of base: 1 = DEPRESSION 2 = SLIGHT CREASE 3 = TRANSVERSE CREASE

[2] Rachilla Hairs: 1 = SHORT 2 = LONG

9. STIGMA:

[ ] Hairs: 1 = FEW 2 = MANY

10. SEED:

[2] Type: 1 = NAKED 2 = COVERED

[2] Hairs on Ventral Furrow: 1 = ABSENT 2 = PRESENT

[4] Length: 1 = SHORT (8.0 mm.) 2 = SHORT TO MIDLONG (7.5 - 9.0 mm.) 3 = MIDLONG (8.5 - 9.5 mm.) 4 = MIDLONG TO LONG (9.0 - 10.5 mm.) 5 = LONG (10.0 mm.)

[4] Wrinkling of hull: 1 = NAKED 2 = SLIGHTLY WRINKLED 3 = SEMIWRINKLED 4 = WRINKLED

[1] Aleurone Color: 1 = COLORLESS (White or Yellow) 2 = BLUE

[0][0] PERCENT ABORTIVE

[4][1] GMS. PER 1000 SEEDS

11. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] SEPTORIA	[1] NET BLOTCH moderate field resistance	[0] SPOT BLOTCH	[1] POWDERY MILDEW moderate field susceptibility
[0] LOOSE SMUT	[0] BACTERIAL BLIGHT	[0] COVERED SMUT	[0] FALSE LOOSE SMUT
[0] STEM RUST	[1] LEAF RUST moderate field susceptibility	[0] SCAB	[1] SCALD moderate field susceptibility
[0] AY	[0] BSMV	[0] BYDV	[0] OTHER (Specify)

12. INSECT: (0 = Not tested, 1 = Susceptible, 2 = Resistant)

[0] GREEN BUG	[0] ENGLISH GRAIN APHID	[0] CHINCH BUG	[0] ARMYWORM
[0] GRASS HOPPERS	[0] CEREAL LEAF BEETLE	[0] OTHER (Specify)	

HESSIAN FLY RACES: [0] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

13. CHEMICAL (0 = Not Tested, 1 = Susceptible, 2 = Resistant)

[0] DDT [ ] OTHER (Specify)

14. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Gustoe	Seed size	Gustoe
Leaf size	Gustoe	Coleoptile elongation	Gustoe
Leaf color	Gustoe	Seedling pigmentation	Gustoe
Leaf carriage	Gustoe	Juvenile Growth	Gustoe

RECEIVED USDA AMS JUL 2 - 1992 Plant Variety Protection Office

REFERENCES: The following publications may be used as a reference aid for the standardization of character descriptions and terms used in this form:

1. Wiebe, G. A., and D. A. Reid, 1961, Classification of Barley Varieties Grown in the United States and Canada in 1958, Technical Bulletin No. 1224, U.S. Dept. of Agriculture.
2. Reid, D. A., and G. A. Wiebe, 1968, Barley: Origin, Botany, Culture, Winter Hardiness, Genetics, Utilization, Pests, Agriculture Handbook No. 338, U.S. Dept. of Agriculture. pp. 61 - 84.
3. Malting Barley Improvement Association, Milwaukee, Wisconsin, 1971, Barley Variety Dictionary.

COLOR: Nickerson's or any recognized color fan may be used to determine color of the described variety.

9200226

April 2, 1993

Alan A. Atchley, Plant Variety Examiner
Plant Variety Protection Office
NAL Building Room 500
10301 Baltimore Blvd.
Beltsville, MD 200705-2351

Subject: Plant Variety Application No. 9200226, Barley 'MAX'.

In response to your letter of December 7 1992 the following information requests are presented.

Application form Question 19.

MAX barley was approved for certification by the National Small Grain Variety Review Board on January 23, 1991. Date of release was October 1, 1991.

MAX barley has been observed to be stable and uniform since the original 1988 seed increase. Although the 1990 production exhibited .001% genetic male sterility, no male sterility was observed in the increase from head rows in 1992. Yield stability has been shown through four years of testing:

Arizona: 1989, Maricopa grain yield data resulted in MAX at 108% of the established variety 'Gustoe'.

1989 - 1991 MAX yielded 106% of Gustoe.

1992, In four Arizona tests MAX grain yield was 109% of Gustoe.

California: Yield data for 12 location years resulted in MAX yields at 108% of Gustoe.

If additional information is desired please advise soon so data may be obtained from fields in April and May for meeting the June 8 deadline.

Sincerely,

Rex K Thompson

Rex K. Thompson

EXHIBIT "D" - ADDITIONAL DESCRIPTION

"Max" is an awned, six-rowed, semidwarf spring feed barley, especially adapted to the irrigated desert areas of Arizona and California and has performed well at Moses Lake, Washington, Aberdeen, Idaho and Fruita, Colorado. Yield for 19 location years in Arizona and California has been 7% more than the popular "Gustoe". Like Gustoe, it is relatively late in maturity, has a prostrate juvenile growth habit and short stiff straw.

Early growth of Max is slightly more prostrate, slower and darker green than Gustoe. Max maturity has averaged one day later than Gustoe with plant height at maturity one centimeter less. Max shows some tolerance to net blotch and is moderately susceptible to leaf rust. Field reaction to scald and powdery mildew is somewhat more moderate for Max than for Gustoe. Pigmentation may be found on the lemma of Max in the dough stage of growth.

TABLE 1 YIELD EVALUATION, ARIZONA & CALIFORNIA FOR 19 LOCATION YEARS

	Yield in lbs. per acre		Test weight in lbs. per bu		Kernel weight in grams per m	
	Max	Gustoe	Max	Gustoe	Max	Gustoe
Maricopa, AZ 1989	6990	6469	58.0	53.0	--	--
Maricopa, AZ 1990	6477	6935	51.0	51.0	43.0	39.8
Maricopa, AZ 1991	9000	8093	54.5	54.5	46.5	43.2
Yuma, AZ 1990	6088	6262	--	--	--	--
Yuma, AZ 1991	5873	5227	--	--	--	--
U of A - Maricopa 1990	6735	5878	53.0	51.5	--	--
U of A - Maricopa 1991	6250	5016	52.0	51.0	--	--
AVERAGE - ARIZONA	6773	6269	52.7	52.2	44.8	41.5
U of CA, Butte, CO 1990	3350	3730	50.4	49.1	39.5	37.8
U of CA, Butte, CO 1991	7210	7790	51.3	52.5	42.8	45.0
U of CA, Sutter, CO 1990	3290	2930	50.7	50.0	42.2	38.0
U of CA, Sutter, CO 1991	5850	6120	53.8	55.1	45.8	44.5
U of CA, Davis 1990	4740	4080	50.3	48.8	37.0	34.2
U of CA, Davis 1991	5170	4390	51.9	50.0	37.5	31.9
U of CA, Merced, CO 1990	4980	5260	48.3	50.2	37.8	40.6
U of CA, Merced, CO 1991	3810	4390	50.3	50.3	37.4	37.7
U of CA, Kings, CO 1990	4600	4680	50.5	52.5	38.8	36.9
U of CA, Kings, CO 1991	7340	6290	53.6	53.2	40.8	37.3
U of CA, Kern, CO 1990	6200	5340	50.1	51.3	38.5	38.3
U of CA, Kern, CO 1991	6580	5290	52.2	50.8	40.8	38.0
AVERAGE - CALIFORNIA	5275	5024	51.3	51.1	39.9	38.4
AVERAGE AZ-CA	5817	5483	51.6	51.4	40.6	38.8

TABLE 2 - PLANT HEIGHT AND STANDABILITY AT MATURITY

	Plant Height in inches		Lodge Rating at Maturity	
	Max	Gustoe	Max	Gustoe
Maricopa, AZ 1989	36	34	1.0	3.3
Maricopa, AZ 1990	31	31	2.8	4.8
Maricopa, AZ 1991	36	35	2.2	2.8
U of AZ, Maricopa 1990	30	30	1.0	1.0
U of AZ, Maricopa 1991	36	32	4.5	5.4
AVERAGE - ARIZONA	38.8	32.4	2.3	3.5
U of CA, Butte, CO 1990	31	30	6.0	7.3
U of CA, Butte, CO 1991	27	30	1.3	1.5
U of CA, Meridian, CO 1990	34	37	3.5	5.5
U of CA, Meridian, CO 1991	29	33	1.0	1.0
U of CA, Davis 1990	34	34	1.3	5.0
U of CA, Davis 1991	36	37	2.5	8.0
U of CA, Merced, CO 1990	35	33	2.5	1.8
U of CA, Merced, CO 1991	36	33	1.0	1.0
U of CA, Kings, CO 1990	21	24	1.0	1.5
U of CA, Kings, CO 1991	36	39	3.3	6.3
U of CA, Kern, CO 1990	39	39	3.0	4.8
U of CA, Kern, CO 1991	--	--	7.3	7.5
AVERAGE - CALIFORNIA	32.5	33.5	2.8	4.3
OVERALL AVERAGE - 17 LOCATION YEARS	32.9	33.2	2.7	4.0

Rating scale for lodging: 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 7 = 85-95%, 8 = 96-100%.

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TABLE 3 - MATURITY COMPARISON WITH GUSTOE AND UC 603

	Days to 50% headed after March 1			Days to Maturity after March 1		
	Max	Gustoe	UC 603	Max	Gustoe	UC 603
Maricopa, AZ 1989	25	24	15	--	--	--
Maricopa, AZ 1990	34	33	22	84	80	72
Maricopa, AZ 1991	27	27	16	80	80	67
U of CA, Merced, CO 1990	68	67	58	--	--	--
U of CA, Davis 1990	52	50	32	84	82	72
U of CA, Davis 1991	60	59	45	97	95	91
AVERAGE	44	43	31	86	84	75

TABLE 4 - NOTED FIELD REACTION TO DISEASE OF SUSCEPTIBLE AND RESISTANT BARLEY VARIETIES IN THE UNIVERSITY OF CALIFORNIA REGIONAL TRIALS IN 1990 AND 1991

BARLEY VARIETY	DISEASE	LOCATION OF TRIAL						AVERAGE	REACTION
		BUTTE	SUTTER	DAVIS	MERCED	KING	KERN		
Max	Leaf rust 1990	3.3	1.3	1.3	1.8	1.5	1.0	(1.70)	
	Leaf rust 1991	--	1.0	--	1.3	1.0	--	1.10	moderately susceptible
	Net blotch 1990	1.3	--	1.8	--	--	1.0	(1.37)	
	Net blotch 1991	1.0	1.0	1.5	--	1.3	--	1.20	moderately resistant
	Scald 1990	2.0	1.0	--	--	--	--	(1.50)	moderately susceptible
	Powdery mildew '90	1.8	2.3	2.0	--	--	1.3	(1.85)	
	Powdery mildew '91	--	--	1.8	2.3	1.5	--	1.85	moderately susceptible
Gustoe	Leaf rust 1990	2.3	1.3	1.3	3.0	2.3	1.3	(1.92)	
	Leaf rust 1991	--	1.0	--	1.3	1.0	--	1.10	moderately susceptible
	Net Blotch 1990	1.0	--	1.3	--	--	1.0	(1.10)	
	Net Blotch 1991	1.0	1.0	1.5	--	1.0	--	1.11	resistant
	Scald 1990	3.3	1.3	--	--	--	--	(2.30)	susceptible
	Powdery mildew '90	2.5	2.3	3.5	--	--	2.3	(2.65)	
	Powdery mildew '91	--	--	2.8	3.3	3.0	--	3.03	susceptible
UC 337	Leaf rust 1990	1.3	1.0	1.0	1.0	1.0	1.0	(1.05)	
	Leaf rust 1991	--	1.0	--	1.0	1.0	--	1.00	resistant
	Net Blotch 1990	1.0	--	1.0	--	--	1.0	(1.00)	
	Net Blotch 1991	1.0	1.0	1.0	--	1.0	--	1.00	resistant
	Scald 1990	1.0	1.0	--	--	--	--	(1.00)	resistant
	Powdery mildew '90	1.5	3.5	1.8	--	--	1.8	(2.15)	
	Powdery mildew '91	--	--	1.0	2.3	1.5	--	1.60	moderately susceptible
UC 603	Leaf rust 1990	1.8	1.3	1.0	1.3	1.3	1.3	1.33	
	Leaf rust 1991	--	1.0	--	1.0	1.0	--	1.00	moderate resistant
	Net Blotch 1990	1.3	--	1.0	--	--	1.0	1.10	
	Net Blotch 1991	1.0	1.0	1.0	--	1.0	--	1.04	resistant
	Scald 1990	1.0	1.0	--	--	--	--	1.00	resistant
	Powdery mildew '90	2.3	2.8	1.3	--	--	1.3	1.93	
	Powdery mildew '91	--	--	1.0	1.5	1.3	--	1.27	moderately resistant

Rating scale for diseases (area of flag - 1 leaf affected): 1 = 0-3%, 2 = 4-14%, 3 = 15-29%, 4 = 30-49%, 5 = 50-69%, 6 = 70-84%, 8 = 96-100%

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EXHIBIT "E" - STATEMENT OF BASIS OF APPLICANTS OWNERSHIP"

Farmers Marketing Corporation is the proprietary owner and intended commercial user of Max barley. Regular employees of Farmers Marketing Corporation have developed this variety in their comprehensive cereal grain improvement program.